IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
Before the Board of Patent Appeals and Interferences

In re Patent Application of

HORN et al.

Serial No. 09/780,416

Filed: February 12, 2001

Title: METHOD AND SYSTEM FOR CONTROLLING A PROCESSING OF VIDEO DATA

Atty Dkt. JRL-2789-35
C# M#
Confirmation No. 8129
TC/A.U.: 2623
Examiner: Shang, Annan Q.
Date: August 11, 2009

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

☐ **Correspondence Address Indication Form Attached.**

☐ **NOTICE OF APPEAL**
Applicant hereby **appeals** to the Board of Patent Appeals and Interferences from the last decision of the Examiner twice/finally rejecting applicant's claim(s). $540.00 (1401)/$270.00 (2401) $

☒ An appeal **BRIEF** is attached in the pending appeal of the above-identified application $540.00 (1402)/$270.00 (2402) $ 540.00

☐ Credit for fees paid in prior appeal without decision on merits -$ ( )

☐ A reply brief is attached. **(no fee)**

☐ Petition is hereby made to extend the current due date so as to cover the filing date of this paper and attachment(s)
One Month Extension $130.00 (1251)/$65.00 (2251)
Two Month Extensions $490.00 (1252)/$245.00 (2252)
Three Month Extensions $1110.00 (1253/$555.00 (2253)
Four Month Extensions $1730.00 (1254/$865.00 (2254) $

☐ "Small entity" statement attached.

Less month extension previously paid on -$( )

TOTAL FEE ENCLOSED $ 540.00

☒ **CREDIT CARD PAYMENT FORM ATTACHED.**

Any future submission requiring an extension of time is hereby stated to include a petition for such time extension. The Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, in the fee(s) filed, or asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our **Account No. 14-1140.**

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

HORN et al. Atty. Ref.: 2789-35

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For: METHOD AND SYSTEM FOR CONTROLLING A PROCESSING OF VIDEO DATA

Before the Board of Patent Appeals and Interferences

BRIEF FOR APPELLANT

On Appeal From Final Rejection
From Group Art Unit 2623

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
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APPEAL BRIEF

I. REAL PARTY IN INTEREST

The real party in interest is the assignee, Telefonaktiebolaget L M Ericsson (publ).

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals related to this subject application. There are no interferences related to this subject application.

III. STATUS OF CLAIMS

Claims 1, 3, 5, 6, 8-10, 12-17, 19-24, and 26-36 are pending. Claims 2, 4, 5, 7, 11, 18, and 25 are canceled. Claims 1, 3, 5, 6, 8-10, 12-17, 19-24, and 26-36 are appealed.

IV. STATUS OF AMENDMENTS

An amendment was filed after final on May 29, 2009, which was entered for purposes of appeal.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

The technology in this case relates to controlling the processing of video data for transmission over a radio connection that employs multiple protocol layers (see the example in Figure 1). Video streaming is less sensitive to packet loss but more delay sensitive than regular data transmission. Mobile radio communications, with limited bandwidth and hostile, changing radio conditions, present additional challenges to the particular needs of video streaming. These challenges may be addressed using receiver feedback to control the rate of the video transmitter in order to avoid network congestion and/or high packet loss rate. But feedback information from a receiving unit may be lost or delayed unpredictably and itself uses precious radio bandwidth. Delay is a particular problem with end-to-end feedback approaches, as described in the background.

Moreover, receiver feedback is based on the receiver's measurements, which only implicitly reflects network conditions. Also, multicast and broadcast type transmissions do not lend themselves to receiver feedback. The inventors recognized that significant benefits could be achieved by avoiding the use of receiver feedback in mobile radio communications and having the source/transmitter obtain information about radio channel conditions that is already available in the radio network, e.g., a base station control element such as a BSC as shown several of the Figures.

Figure 1 shows an example of a multiple communications protocol layer communication between two terminals with at least the source terminal being a mobile radio. The source/transmitting mobile radio is currently in a first cell coverage area situated near a second cell coverage area. The protocol stack includes an application layer 1 that handles the coding or transcoding of video data which is on top of a network layer 3 which is on top of a link layer 7. One or more transmission condition parameters associated with possible handover of the mobile radio connection from the first cell to the second cell (page 20, lines 27-29) obtained from the BSC is provided from a lower protocol layer L2 of the mobile terminal to the higher application protocol layer L1 of the same mobile terminal, see e.g. Figure 2a. This avoids the need for receiver feedback traffic over the radio link and the attendant problems noted above.

The handover condition parameter relates to a capacity of the second cell coverage area to adapt to the coding or transcoding of video data in accordance with the handover condition parameter. Page 22, lines 17-28 explain that when performing a handover to a target cell that has a different capacity from the current cell, the handover information can be used to specifically adapt the coding or transcoding process to the new capacity condition. For example, if the lower protocol layer handover parameter information indicates that another cell provides a higher capacity, the video coding can be adapted at the higher application layer to provide a higher data rate, which provides higher picture quality. Handover knowledge and accompanying handover-related conditions are especially important in the case of an inter-system handover, for example from a UMTS system to a GSM system or from an E-GPRS (Enhanced-GPRS or Edge-GPRS) system to a GPRS system.

The following claim charts provide a mapping of the independent claims onto non-limiting example embodiment text from the specification and figures by reference numerals where appropriate. This mapping is not intended to be used for claim construction.

1. A method for controlling a processing of video data including coding or transcoding of video data such that said video data may be transmitted over a connection in a communication network from a source to a receiver, said connection employing a plurality of protocol layers, said method including:	Figure 5 is a flowchart that shows a method for controlling processing of video data including coding or transcoding of video data. Figure 1 shows video data transmitted over a connection in a communication network from a source to a receiver, where the connection employs a plurality of protocol layers 1, 3, and 7.
performing said controlling of the processing of video data at a first application layer in said source,	See Figure 1 and page 12, lines 20-22.
acquiring from a network control element separate from said source and said receiver a value of one or more transmission condition parameters indicative of transmission conditions in the network, where said one or more transmission condition parameters are specific for a second layer provided lower than said first application layer,	See the link control element 7 in the mobile terminal A acquiring a value of one or more transmission condition parameters indicative of transmission conditions in the network at the lower layer from link control element 9 (a BSC) for example in Figure 2a and page 15, lines 15-29.
deriving one or more values of one or more video control parameters from said value of said at least one transmission condition parameter,	Page 12, line 31-page 13, line 8 and page 13, line 22-page 14, line10.

providing to said first application layer said derived one or more values, and	Figure 2a and page 12, line 31-page 13, line 5.
performing at said first application layer said controlling of the processing of video data including coding or transcoding of video data in accordance with said derived one or more values,	Page 12, line 20-page 13, line 12 and page 13, line 22-page 14, line10.
wherein said communication network includes a wireless communication network, said connection comprises a radio link for transporting a mobile communication including video data between a mobile station in said wireless communication network and a radio base station in said wireless communication network, said mobile station being currently located in a first cell coverage area, and said one or more transmission condition parameters include information pertaining to one or more handover conditions associated with handing over the mobile communication to a second cell coverage area, and	Figure 2a. Page 11, lines 19-23 (wireless network/communication). Page 15, lines 8-10 (mobile station/wireless network), lines 33-34 (radio link), and lines 21-29 (radio link and base station controller). See page 22, lines 17-27.
wherein the information pertaining to one or more handover conditions includes information relating to a capacity of the second cell for adapting the coding or transcoding of video data in accordance with	See page 22, lines 17-27.

that information.	

16. A transmitting system for transmitting video data over a connection in a communication network from a source to a receiver that employs a plurality of protocol layers, comprising:	Figure 1 shows video data transmitted over a connection in a communication network from a source to a receiver, where the connection employs a plurality of protocol layers 1, 3, and 7.
a processing element in said source arranged to process video data to be transmitted at a first application layer including to code or transcode video data,	See element 1 in Figures 1 and 2a and page 12, lines 20-22.
an acquisition element arranged to acquire from a network control element separate from said source and receiver a value of one or more transmission condition parameters indicative of a transmission condition associated with said connection, said one or more transmission condition parameters being specific for a second layer lower than said first layer, and	See the link control element 7 in the mobile terminal A arranged to acquire a value of one or more transmission condition parameters indicative of transmission conditions in the network at the lower layer from link control element 9 (a BSC) for example in Figure 2a and page 15, lines 15-29.
a deriving element for deriving one or more values of one or more video control parameters from said value of said one or more transmission condition parameters, said deriving element being arranged to provide said derived one or more values to	See deriving element 1 in mobile terminal A in Figure 2a. Page 12, line 31-page 13, line 8 and page 13, line 22-page 14, line10.

said processing element at said first application layer,	
where said processing element is arranged to control the processing of video data including coding or transcoding video data at said first application layer based on said derived one or more values,	Page 12, line 20-page 13, line 12 and page 13, line 22-page 14, line10.
wherein said communication network includes a wireless communication network, said connection comprises a radio link for transporting a mobile communication including video data between a mobile station in said wireless communication network and a radio base station in said wireless communication network, said mobile station being currently located in a first cell coverage area, and said one or more transmission condition parameters include information pertaining to one or more handover conditions associated with handing over the mobile communication to a second cell coverage area, and	Figure 2a. Page 11, lines 19-23 (wireless network/communication). Page 15, lines 8-10 (mobile station/wireless network), lines 33-34 (radio link), and lines 21-29 (radio link and base station controller). See page 22, lines 17-27.
wherein the information pertaining to one or more handover conditions includes information relating to a capacity of the second cell for adapting the coding or transcoding of video data in accordance with	See page 22, lines 17-27.

that information.	

32. A transmitting unit for transmitting to a receiver video data over a connection in a communication network that employs a plurality of protocol layers, comprising:	See transmitting terminal A and receiving terminal B in the Figures. Figure 1 shows video data transmitted over a connection in a communication network from a source to a receiver, where the connection employs a plurality of protocol layers 1, 3, and 7.
a processing element arranged to process video data to be transmitted at an application first layer including to code or transcode video data,	Processing element 1 in the Figures does video processing at an application first layer including to code or transcode video data. See Figure 1 and page line 20-page 13, line 12 and page 13, line 22-page 14, line10.
an acquisition element arranged to acquire from a network control element separate from said transmitting unit and said receiver a value of one or more transmission condition parameters indicative of a transmission condition associated with said connection, said one or more transmission condition parameters being specific for a second layer lower than said first application layer, and	See the link control element 7 in the mobile terminal A arranged to acquire a value of one or more transmission condition parameters indicative of transmission conditions in the network at the lower layer from link control element 9 (a BSC) for example in Figure 2a and page 15, lines 15-29.

a deriving element for deriving one or more values of one or more video control parameters from said value of said one or more transmission condition parameters, said deriving element being arranged to provide said derived one or more values to said processing element at said first application layer,	See deriving element 1 in mobile terminal A in Figure 2a. Page 12, line 31-page 13, line 8 and page 13, line 22-page 14, line10.
where said processing element is arranged to control the processing of video data including coding or transcoding video data at said first application layer based on said derived one or more values,	Page 12, line 20-page 13, line 12 and page 13, line 22-page 14, line10.
wherein said communication network includes a wireless communication network, said connection comprises a radio link for transporting a mobile communication including video data between a mobile station in said wireless communication network and a radio base station in said wireless communication network, said mobile station being currently located in a first cell coverage area, and said one or more transmission condition parameters include information pertaining to one or more handover conditions associated with handing over the mobile communication to	Figure 2a. Page 11, lines 19-23 (wireless network/communication). Page 15, lines 8-10 (mobile station/wireless network), lines 33-34 (radio link), and lines 21-29 (radio link and base station controller). See page 22, lines 17-27.

a second cell coverage area, and	
wherein the information pertaining to one or more handover conditions includes information relating to a capacity of the second cell for adapting the coding or transcoding of video data in accordance with that information.	See page 22, lines 17-27.

VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL

The sole ground of rejection to be reviewed the Board is the rejection of claims 1, 3, 5, 6, 8-10, 12-17, 19-24, and 26-36 under 35 U.S.C. §103 as being unpatentable based on three references: (1) U.S. Patent 6,490,627 to Kalra, (2) U.S. Patent 6,421,733 to Tso, and (3) U.S. Patent 6,208,620 to Sen.

VII. ARGUMENT

The Obviousness Rejection of Claims 1, 3, 5, 6, 8-10, 12-17, 19-24, and 26-36 Under 35 U.S.C. §103 Based On Kalra, Tso, and Sen Is Improper

1. The Legal Standard For Obviousness

An invention is obvious only "if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains." 35 U.S.C. §103.

Obviousness is a legal conclusion based on underlying findings of fact. *In re Dembiczak,* 175 F.3d 994, 998 (Fed. Cir. 1999). The underlying factual inquiries are: "(1) the scope and content of the prior art; (2) the level of ordinary skill in the prior art; (3) the differences between the claimed invention and the prior art; and (4) objective evidence of nonobviousness." *Id.*

In *KSR International Co. v. Teleflex, Inc.,* 127 S. Ct. 1727, 1739 (2007), the Supreme Court rejected the Federal Circuit's rigid application of the teaching-suggestion-motivation ("TSM") test. However, in evaluating obviousness in light of multiple interrelated patents, a determination must still be made "whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue." *Id.* at 1741. The Examiner must provide an explicit analysis with supported, articulated reasoning, that includes "an apparent reason to combine the known elements" in the manner claimed. *See Id.* at 1740-41 ("To facilitate review, this analysis should be made explicit."). The Supreme Court stated that this requirement cannot be satisfied by conclusory statements without articulated reasoning and some rational underpinning to support the legal conclusion of obviousness. *Id.* at 1741.

2. Teachings of the Primary Reference to Kalra

Kalra describes encoding, storing, transmitting, and decoding multimedia information in the form of scalable, streamed digital data. A transcoder creates a base stream containing basic informational content and subsequent streams

containing additive informational content from digital multimedia data. Client computers access a stream server that contains the scalable streamed digital data according to a profile associated with each different client computer. This tailors the accessed streams to match the client computer profile so that the best combination of streams can be provided to maximize the resolution of 3D, audio, and video components.

3. Kalra Lacks Nearly Every Feature of the Independent Claims

Although Kalra teaches adaptive video coding based on current network bandwidth conditions, Kalra lacks many features of the independent claims 1, 16, and 32. The independent claims recite that transmission condition parameters are transferred both across layers (from a lower protocol layer to a higher protocol layer) and between different nodes. Example claim 32 directed to **a transmitting unit** that includes:

- "a processing element arranged to process video data to be transmitted at an application first layer including to code or transcode video data,"
- "an acquisition element arranged to acquire from a network control element separate from said transmitting unit and said receiver a value of one or more transmission condition parameters indicative of a transmission condition associated with said connection, said one or

more transmission condition parameters being specific for a second layer lower than said first application layer,"

- "a deriving element for deriving one or more values of one or more video control parameters from said value of said one or more transmission condition parameters, said deriving element being arranged to provide said derived one or more values to said processing element at said first application layer,"
- "where said processing element is arranged to control the processing of video data including coding or transcoding video data at said first application layer based on said derived one or more values,"
- "wherein said communication network includes a wireless communication network, said connection comprises a radio link for transporting a mobile communication including video data between a mobile station in said wireless communication network and a radio base station in said wireless communication network, said mobile station being currently located in a first cell coverage area, and said one or more transmission condition parameters include information pertaining to one or more handover conditions associated with handing over the mobile communication to a second cell coverage area, and"

- "wherein the information pertaining to one or more handover conditions includes information relating to a capacity of the second cell for adapting the coding or transcoding of video data in accordance with that information."

Kalra fails to teach many of the features from claim 32 including those highlighted above.

Although the final action maps Kalra's transcoders to the processing element, the final action never identifies what in Kalra corresponds to the claimed acquisition element in the transmitting unit or the "second layer lower than said first application layer." Kalra only vaguely mentions the possibility of taking into account an "available network bandwidth" at column 15, line 51. But no specifics about how this available bandwidth is determined or what element determines the bandwidth are described. There simply is no teaching in Kalra that available bandwidth is acquired at a lower protocol layer of an acquisition element in the transmitting unit and provided to a processing element at a higher protocol application layer of that same transmitting unit.

Figures 13 to 15 of Kalra teach executing a communication between the two endpoints of the communication, namely a server and a client, where all control information is either present at the server or possibly sent from the client to the server. There is no disclosure of acquiring data from a control node located in the network between the server and the client, (i.e., "a network control element

separate from said transmitting unit and said receiver"). In other words, Kalra only acquires and processes data at the sender or the receiver of a communication, and there is no description of acquiring data values at a separate intermediate network node and then providing that acquired data to a processing element in the transmitting unit to derive control information for use at the transmitting unit. Nor does Kalra describe the different protocol layers and the provision of available bandwidth (mapped by the Examiner onto the claimed one or more transmission condition parameters) at the claimed second lower protocol layer in the transmitting unit which is then provided to the application layer in the same transmitting unit.

Still further, the Examiner admits that the many claim elements relating to wireless communications and handover recited in the two "wherein" clauses are also missing from Kalra.

4. Teachings of the Secondary Reference to Tso

Of the many deficiencies in Kalra, the Examiner admits that Kalra does not acquire from a network control element, separate from the transmitting unit and the receiver, a value of one or more transmission condition parameters specific for the second lower protocol layer indicative of transmission conditions in the network. For this one of the multiple missing features from Kalra, the Examiner turns to Tso. Tso teaches a system for dynamically transcoding data transmitted between computers. The transcoder 20 includes a parser 22 and several transcode

service providers 24. The parser 22 selectively invokes one or more of the service providers 24 based on a preset selection criterion. See col. 3, lines 8-16. There is no identification in the final action of where lower and higher protocol layers are described for the transcoder 20 in Tso.

Nor does the Examiner explain how the parser 22 and transcode service providers 24 contained within the server transcoder 20 are separate from the server transcoder 20. In other words, the selection of a particular transcode service provider 24 is performed by the parser 22 in the same server device and not from a network element separate from that server. So it is unclear how Tso remedies this admitted deficiency or the deficiencies noted above for Kalra such as acquiring available bandwidth at a lower layer of a transmitting unit and providing it to a higher application layer of the same transmitting unit.

Indeed, the Examiner's rationale for combining Tso with Kalra confirms that Tso does not teach the features for which the Examiner relies. The final rejection states that it would be obvious: "to place the processing element or acquiring element with any of the devices (client system, server, gateway, etc.,) as desired to efficiently analysis [sic] the various parameter(s) and encode the multimedia data." The problem is that neither Kalra nor Tso teaches this technical feature. As demonstrated above, Tso does not teach the claimed separate network control element. Moreover, the Examiner's quoted rationale simply restates a missing claim feature as the reason for combining Kalra and Tso. But this is not a

reasonable basis for combining references. Tso's transcoding server 20 performs dynamic transcoding in the server 20—that function is not performed by some other separte network control element.

5. Sen Is Unsuitable for Combination with Kalra and Tso

The Examiner admits that Kalra and Tso lack mobile radio connections, radio link conditions, radio base stations, cells, handover, cell capacity, or adapting coding or transcoding of video data to handover conditions relating a target cell's capacity. The Examiner turns to a third reference to Sen.

Sen relates to a system that carries a TCP connection over a wireless link. A TCP-aware agent sublayer (TAS) is introduced in a protocol stack for caching TCP packets and corresponding acknowledging packets. A link monitoring agent 211 (see Figure 2) monitors the condition of a wireless transmission channel (RLP 213) for the occurrence of a predefined fault. When the fault is an air link packet loss, the associated packet is immediately retransmitted from the cache. When the fault is a temporary disconnect, a congestion window of the TCP source is closed.

Sen is an unsuitable reference to combine with Kalra and Tso for many reasons. First, Sen does not describe video data or processing video data as claimed. Second, Sen's transport TAS layer is below the application layer. The claims recite "processing of video data at a first application layer" which is higher than the claimed second layer. The TAS layer 209 is not Sen's application

layer 221 (see Figure 2). Third, there is also no suggestion in Sen of video processing that includes "coding or transcoding of video data."

Fourth, Sen's link condition feedback 212 is not used in the same way as claimed. The Sen reference teaches a specific mechanism for dealing with a problem that occurs on the level of the transport layer. Sen realizes that the loss of a packet or the loss of connectivity of the radio link severely impacts the TCP layer. Sen counteracts this by providing a specific sublayer (the TAS 209) and controlling this sublayer with the help of the link monitoring agent 211. In contrast, the claimed application layer directly processes video data including coding or transcoding the video data.

Fifth, coding or transcoding video data is not and could not be performed at Sen's transport layer because the transport layer is not concerned with the contents of what is being transported. TAS 209 is not aware of any data transported in packets because the TAS 209 is *not* concerned with packet content, only with packet transport. This is why the element described in Sen is TCP-aware.

Sixth, it is important to understand that the Sen reference specifically deals with TCP and that video streaming is typically not done over TCP because video streaming is delay-sensitive. In other words, an ARQ protocol like TCP is usually not suitable for video transmission.[1] For these six reasons, a skilled person would

[1] Although ARQ is possible in connection with video transmission, it is generally not desirable.

not have considered applying the Sen's teachings to the processing of video data in a system based on Kalra and Tso.

6. The Combined Teachings of All Three References Do Not Teach All the Features of the Independent Claims

Even with three references, there are still multiple independent claim features missing. The Examiner uses Sen in an effort to supply missing claim features relating to mobile radio connections, radio link conditions, radio base stations, cells, handover, cell capacity, or adapting coding or transcoding of video data to handover conditions relating a target cell's capacity. Sen does describe packet communications in a radio environment and is concerned with handling short (fades) and longer (hard handoff) time periods where the communication is "disconnected." The wireless link monitoring agent predicts the onset of a disconnection using a channel state estimation algorithm that monitors the number of erroneous air-link frames in a set of consecutive frames. When a disconnection is predicted, the TAS layer delays ACK packets, quenches a TCP transmit window to zero, etc.

But Sen's brief mention of hard-handover, (see col. 4, lines 20-23), does not teach (1) the lower protocol layer (RLP 213) sending handover condition information including information relating to a cell capacity of the second handover target cell to the RLP layer 222 in the source mobile terminal 201 or (2) the RLP layer 222 then providing handover condition information to the

application layer 221 in that same source mobile terminal 201. Instead, the feedback 212 comes from the RLP layer 213 in a separate wireless access gateway (WAG) 203 and is fed back to the TAS layer 209 in the WAG 203—not the source mobile terminal 201. Recall that a significant advantage of the claimed technology is the ability to eliminate the need for feedback traffic over the radio link and the attendant problems noted in the summary section. If Sen's WAG 203 were to send the feedback information to the application layer of the mobile terminal 201, (which it does not), that would defeat this advantage.

Another deficiency in Sen is that the feedback 212 from the RLP layer 213 in the WAG 203 node is based on frame error rate and not on a cell capacity of a second handover target cell as claimed. The final rejection does not address this missing claim feature.

Sen also does not use the frame error rate feedback information to adapt coding or transcoding of video data in accordance with that information. Instead, Sen delays packet transmissions and signals congestion.

Ultimately, none of the three references teaches a lower protocol layer of a mobile terminal source transmitting unit acquiring from a separate, wireless network control element handover condition information relating to a cell capacity of a second target handover cell and then providing that information to a higher application layer of the same source/transmitting mobile terminal so that processing at the application layer can adapt the coding or transcoding of video

data in the source/transmitting mobile terminal in accordance with that cell capacity information.

When performing a handover to a target cell that has a different capacity from the current cell, the handover information can be used to specifically adapt the coding or transcoding process to the new capacity condition. For example, if the lower protocol layer handover parameter information indicates that another cell provides a higher capacity, the video coding can be adapted at the higher application layer to provide a higher data rate, which provides higher picture quality. Handover knowledge and accompanying handover-related conditions are especially important in the case of an inter-system handover, for example from a UMTS system to a GSM system or from an E-GPRS (Enhanced-GPRS or Edge-GPRS) system to a GPRS system. None of the applied references achieve this particular advantageous video coding adaptability.

7. The Combination of the Three References Lacks a Rational Underpinning

As the Supreme Court explained in *KSR*, to sustain an obviousness rejection, "there must be some articulated reasoning with some rational underpinning." *Id.* at 1741. The three reference combination lacks the required "rational underpinning."

A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore &*

Associates, Inc. v. Garlock, Inc., 721 F.2d 1540 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). For the reasons explained above, Sen leads away from the claimed technology by using separate node with feedback and is unsuitable for handling video streaming, i.e., Sen is TCP-specific and TCP is not well-suited for video streaming.

Moreover, the "rationale" advanced by the Examiner for combining Sen with Tso and Kalra is "to provide cellular services to users...and further account for handover conditions between cells." But a vague idea of "accounting for handover" is not what is claimed. Instead, the claims require that the handover condition information relates to a capacity of the second cell for adapting the coding or transcoding of video data in accordance with that information. None of the references teach this and the Examiner fails to articulate any reason why it would have been obvious to use handover information related to target cell capacity in any of Kalra, Tso, or Sen for the purpose of adapting the coding or transcoding of video data.

Rejections based on §103(a) must rest on a factual basis with these facts being interpreted without hindsight reconstruction of the claims from the prior art. *See In re Warner,* 379 F.2d 1011, 1017 (CCPA 1967), *cert. denied,* 389 *U.S.* 1057 (1968). In other words, the Examiner's basis for the rejection falls short of identifying a cogent unified rationale that would have led an ordinarily skilled artisan to combine selected features from each of the three applied references in a

way that would have resulted in the claimed technology. *See KSR Int'l Co.* v. *Teleflex, Inc.*, 127 S. Ct. 1727, 1741 (2007).

8. Dependent Claims

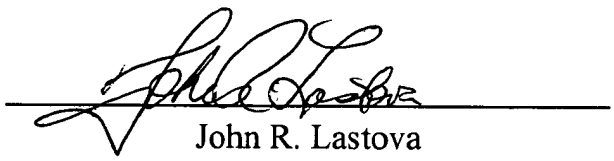
All of the pending dependent claims are patentable at least for the reasons set forth above for the independent claims.

CONCLUSION

For the multiple independent grounds explained above, the final rejection should be reversed, and the application passed to allowance.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: 

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JRL/maa
Appendix A - Claims on Appeal

VIII. CLAIMS APPENDIX

1. (Previously Presented) A method for controlling a processing of video data including coding or transcoding of video data such that said video data may be transmitted over a connection in a communication network from a source to a receiver, said connection employing a plurality of protocol layers, said method including:

performing said controlling of the processing of video data at a first application layer in said source,

acquiring from a network control element separate from said source and said receiver a value of one or more transmission condition parameters indicative of transmission conditions in the network, where said one or more transmission condition parameters are specific for a second layer provided lower than said first application layer,

deriving one or more values of one or more video control parameters from said value of said at least one transmission condition parameter,

providing to said first application layer said derived one or more values, and

performing at said first application layer said controlling of the processing of video data including coding or transcoding of video data in accordance with said derived one or more values,

wherein said communication network includes a wireless communication network, said connection comprises a radio link for transporting a mobile communication including video data between a mobile station in said wireless communication network

and a radio base station in said wireless communication network, said mobile station being currently located in a first cell coverage area, and said one or more transmission condition parameters include information pertaining to one or more handover conditions associated with handing over the mobile communication to a second cell coverage area, and

wherein the information pertaining to one or more handover conditions includes information relating to a capacity of the second cell for adapting the coding or transcoding of video data in accordance with that information.

2. Canceled.

3. (Previously Presented) The method of claim 1, wherein said one or more values of said one or more transmission condition parameters are acquired at said second layer on a sending side of said predetermined link.

4. Canceled.

5. (Previously Presented) The method of claim 1, wherein said second layer is a link layer.

6. (Previously presented) The method of claim 1, wherein said communication network is a wireless communication network, and said method is applied to the processing of video data in one or more of a mobile station in said wireless communication network, a base station in said wireless communication network, an interworking function between said wireless communication network and a fixed network, a terminal device in said fixed network, and a proxy server provided in said wireless communication network or said fixed network.

7. (Canceled).

8. (Original) The method of claim 1, wherein said processing of video data comprises the forward error correction of said video data.

9. (Original) The method of claim 1, wherein said processing of video data comprises the packetization of said video data.

10. (Original) The method of claim 1, wherein said one or more transmission condition parameters are selected from a group consisting of the current transmission delay, the bandwidth allocated for a specific user, the current bit error rate, and the current frame erasure rate.

11. Canceled.

12. (Original) The method of claim 1, further comprising transmitting said video data in scalable form by having a base stratum and at least one enhancement stratum, and by deciding on the inclusion or exclusion of said enhancement stratum in the transmitted video data on the basis of the derived one or more values of said one or more video control parameters.

13. (Previously Presented) The method of claim 1, further comprising transmitting said video data in scalable form by having at least two independent bitstreams of video data, and by selecting between said at least two independent bitstreams on the basis of the derived one or more values of said one or more video control parameters, the selected bitstream being the transmitted video data.

14. (Previously Presented) A computer program product loadable into a computer-readable memory for a digital computer device, including software code portions for performing the method of claim 1 when said computer program product is run on said computer device.

15. (Previously Presented) A computer-readable storage medium storing the computer program product of claim 14 stored thereon.

16. (Previously Presented) A transmitting system for transmitting video data over a connection in a communication network from a source to a receiver that employs a plurality of protocol layers, comprising:

a processing element in said source arranged to process video data to be transmitted at a first application layer including to code or transcode video data,

an acquisition element arranged to acquire from a network control element separate from said source and receiver a value of one or more transmission condition parameters indicative of a transmission condition associated with said connection, said one or more transmission condition parameters being specific for a second layer lower than said first layer, and

a deriving element for deriving one or more values of one or more video control parameters from said value of said one or more transmission condition parameters, said deriving element being arranged to provide said derived one or more values to said processing element at said first application layer,

where said processing element is arranged to control the processing of video data including coding or transcoding video data at said first application layer based on said derived one or more values,

wherein said communication network includes a wireless communication network, said connection comprises a radio link for transporting a mobile communication including video data between a mobile station in said wireless communication network and a radio base station in said wireless communication network, said mobile station being currently located in a first cell coverage area, and said one or more transmission condition parameters include information pertaining to one or more handover conditions associated with handing over the mobile communication to a second cell coverage area, and

wherein the information pertaining to one or more handover conditions includes information relating to a capacity of the second cell for adapting the coding or transcoding of video data in accordance with that information.

17. (Original) The transmitting system according to claim 16, wherein said acquisition element is a part of a control element provided for controlling the transmission of data over a predetermined link forming part of said connection, where said one or more transmission condition parameters are indicative of a transmission condition associated with said predetermined link.

18. Canceled.

19. (Previously presented) The transmitting system of claim 16, wherein said acquisition element is arranged such that said one or more values of said one or more transmission condition parameters are acquired at said second layer on a sending side of said radio link.

20. (Previously Presented) The transmitting system of one of claim 16, wherein said second layer is a link layer.

21. (Previously presented) The transmitting system claim 16, wherein said processing element is provided in one or more of a mobile station in said wireless network, a base station in said wireless network, an interworking function between said wireless network and a fixed network, a terminal device in said fixed network, and a proxy server provided in said wireless network or said fixed network.

22. (Original) The transmitting system of claim 21, wherein said processing element, said acquisition element and said element for deriving values of video control parameters are all provided in one unit.

23. (Original) The transmitting system of claim 21, wherein said acquisition element is provided in a different unit than said processing element.

24. (Original) The transmitting system of claim 23, wherein said processing element is provided in one of a terminal device of said fixed network and a proxy server, and said acquiring element is provided in a base station of said wireless network.

25. Canceled.

26. (Original) The transmitting system of claim 16, wherein said processing element is arranged to perform forward error correction of said video data.

27. (Original) The transmitting system of claim 16, wherein said processing element is arranged to perform packetization of said video data.

28. (Original) The transmitting system of claim 17, wherein said one or more transmission condition parameters are selected from a group consisting of the current transmission delay on the link, the bandwidth allocated for a specific user on the link, the current bit error rate on the link, and the current frame erasure rate on the link.

29. (Previously presented) The transmitting system of claim 16, wherein said one or more transmission condition parameters include one or both of the current carrier to interface ratio on the radio link and the current power-level on the radio link.

30. (Original) The transmitting system of claim 16, wherein said processing element is arranged to control the transmission of said video data in scalable form by having a base stratum and at least one enhancement stratum, and is arranged to decide on the inclusion or exclusion of said enhancement stratum in the transmitted video data on the basis of the derived one or more values of said one or more video control parameters.

31. (Previously Presented) The transmitting system of claim 16, wherein said processing element is arranged to control the transmission of said video data in scalable form by having at least two independent bitstreams of video data, and is arranged to select between said at least two independent bitstreams on the basis of the derived one or more values of said one or more video control parameters, the selected bitstream being the transmitted video data.

32. (Previously Presented) A transmitting unit for transmitting to a receiver video data over a connection in a communication network that employs a plurality of protocol layers, comprising:

a processing element arranged to process video data to be transmitted at an application first layer including to code or transcode video data,

an acquisition element arranged to acquire from a network control element separate from said transmitting unit and said receiver a value of one or more transmission

condition parameters indicative of a transmission condition associated with said connection, said one or more transmission condition parameters being specific for a second layer lower than said first application layer, and

a deriving element for deriving one or more values of one or more video control parameters from said value of said one or more transmission condition parameters, said deriving element being arranged to provide said derived one or more values to said processing element at said first application layer,

where said processing element is arranged to control the processing of video data including coding or transcoding video data at said first application layer based on said derived one or more values,

wherein said communication network includes a wireless communication network, said connection comprises a radio link for transporting a mobile communication including video data between a mobile station in said wireless communication network and a radio base station in said wireless communication network, said mobile station being currently located in a first cell coverage area, and said one or more transmission condition parameters include information pertaining to one or more handover conditions associated with handing over the mobile communication to a second cell coverage area, and

wherein the information pertaining to one or more handover conditions includes information relating to a capacity of the second cell for adapting the coding or transcoding of video data in accordance with that information.

33. (Previously presented) The transmitting unit of claim 32, wherein said unit is one of a mobile station in said wireless network, a base station in said wireless network, an interworking function between said wireless network and a fixed network, a terminal device in said fixed network, and a proxy server provided in said wireless network or said fixed network.

34. (Previously presented) The method of claim 1, wherein said one or more transmission condition parameters include one or more additional transmission condition parameters selected from a group including a current transmission delay on the radio link, a bandwidth allocated for a specific user on the radio link, a current bit error rate on the radio link, a current frame erasure rate, a current carrier to interface ratio on the radio link, and a current power-level on the radio link.

35. (Previously presented) The transmitting system of claim 16, wherein said one or more transmission condition parameters include one or more additional transmission condition parameters selected from a group including a current transmission delay on the radio link, a bandwidth allocated for a specific user on the radio link, a current bit error rate on the radio link, a current frame erasure rate, a current carrier to interface ratio on the radio link, and a current power-level on the radio link.

36. (Previously presented) The transmitting unit of claim 32, wherein said one or more transmission condition parameters include one or more additional transmission condition parameters selected from a group including a current transmission delay on the radio link, a bandwidth allocated for a specific user on the radio link, a current bit error rate on the radio link, a current frame erasure rate, a current carrier to interface ratio on the radio link, and a current power-level on the radio link.

IX. EVIDENCE APPENDIX

There is no evidence appendix.

X. RELATED PROCEEDINGS APPENDIX

There is no related proceedings appendix.